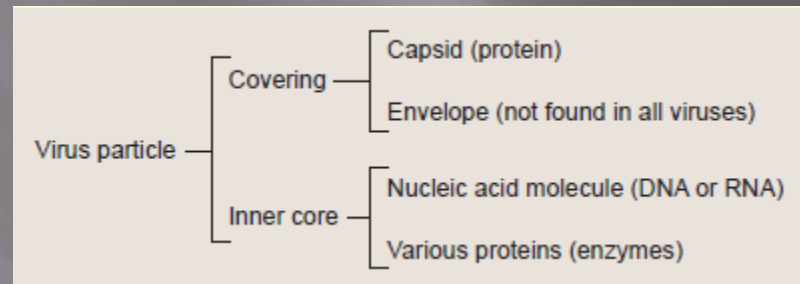


BIOLOGY 1

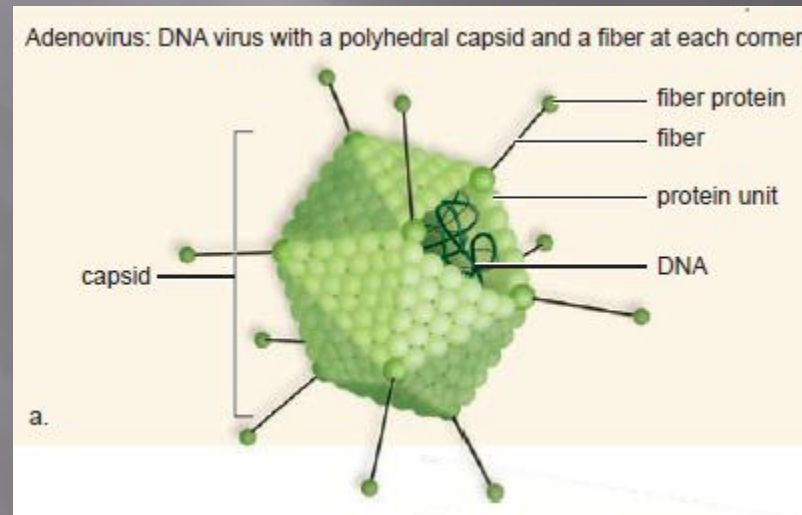
Lecture 3

By Dr.Ghasoun M. Wadai

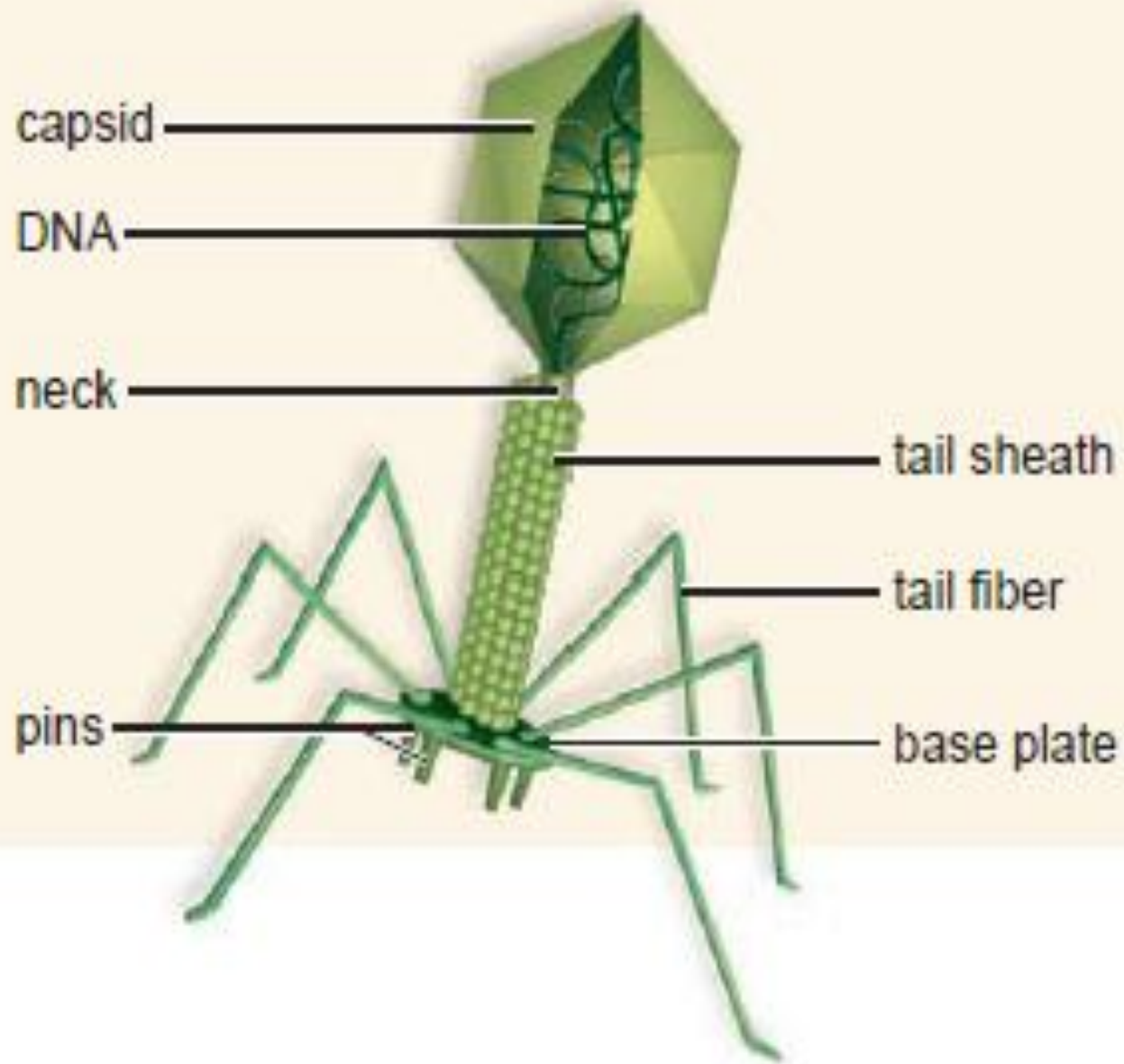
The following diagram summarizes viral structure:



Despite their diversity, all viruses have an outer capsid composed of protein subunits and a nucleic acid core—composed of either DNA or RNA, but not both. Some types of viruses also have a membranous envelope.



T-even bacteriophage: DNA virus with a polyhedral head and a helical tail.



b.

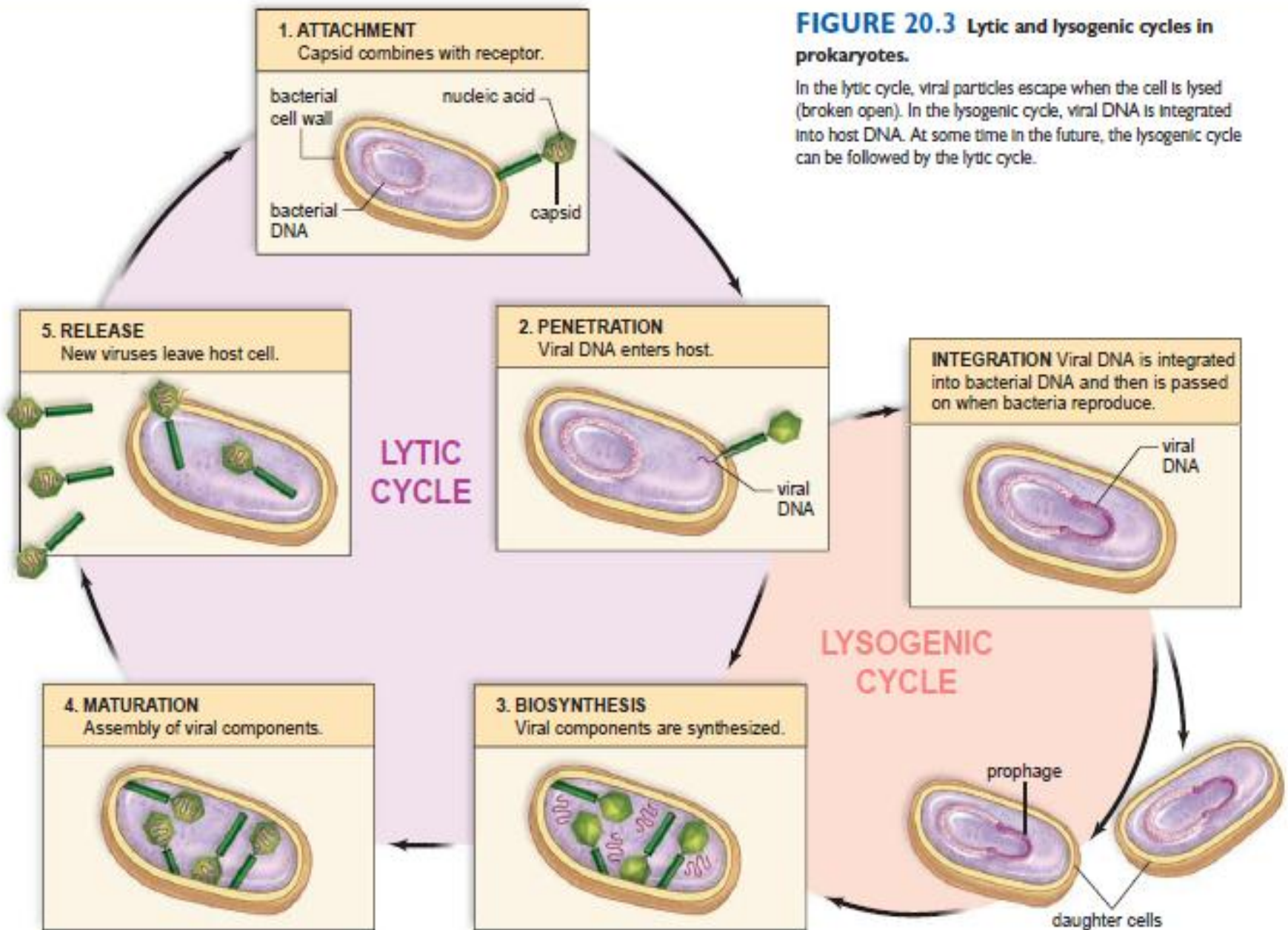


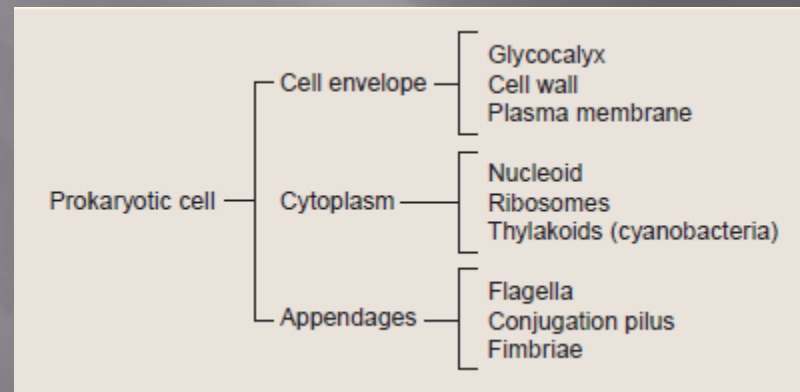
FIGURE 20.3 Lytic and lysogenic cycles in prokaryotes.

In the lytic cycle, viral particles escape when the cell is lysed (broken open). In the lysogenic cycle, viral DNA is integrated into host DNA. At some time in the future, the lysogenic cycle can be followed by the lytic cycle.

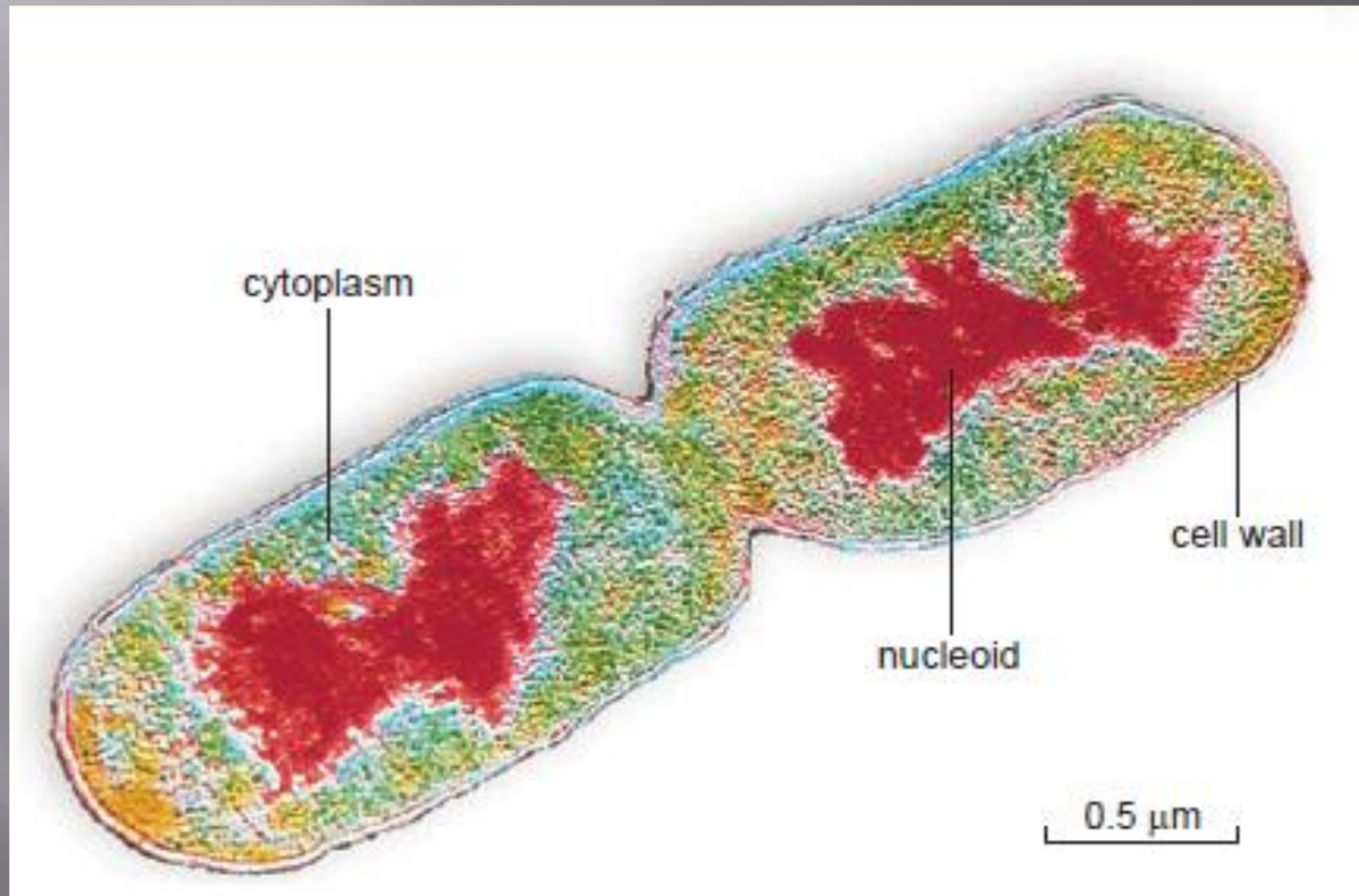
The 3 Domain

- ▣ **Domain: Bacteria, Kingdom Bacteria**
- ▣ **Domain: Archaea, Kingdom Archaea**
- ▣ **Domain: Eukarya:** Kingdom Protista
Kingdom Fungi
Kingdom Plantae
Kingdom Animalia

The following diagram summarizes prokaryotic cell structure



The Binary fission



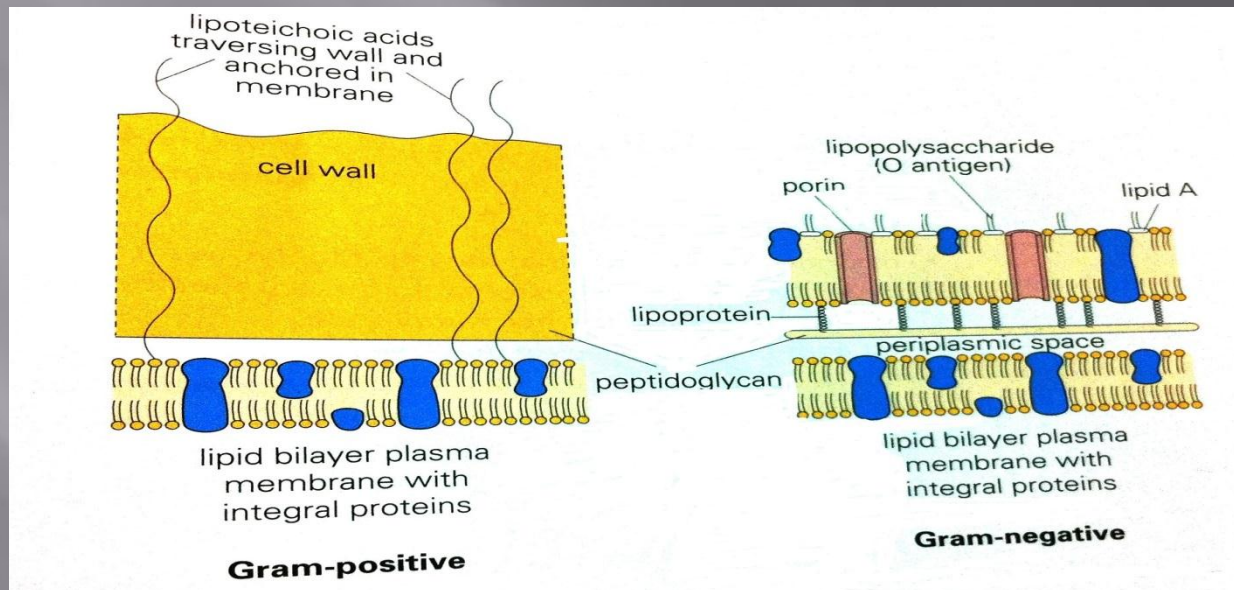
Symbiotic Relationships

- ▣ **mutualistic**, both species benefit.
- ▣ In **commensalistic** relationships, only one species benefits,
- ▣ when it is **parasitic**, one species benefits but the other is harmed.

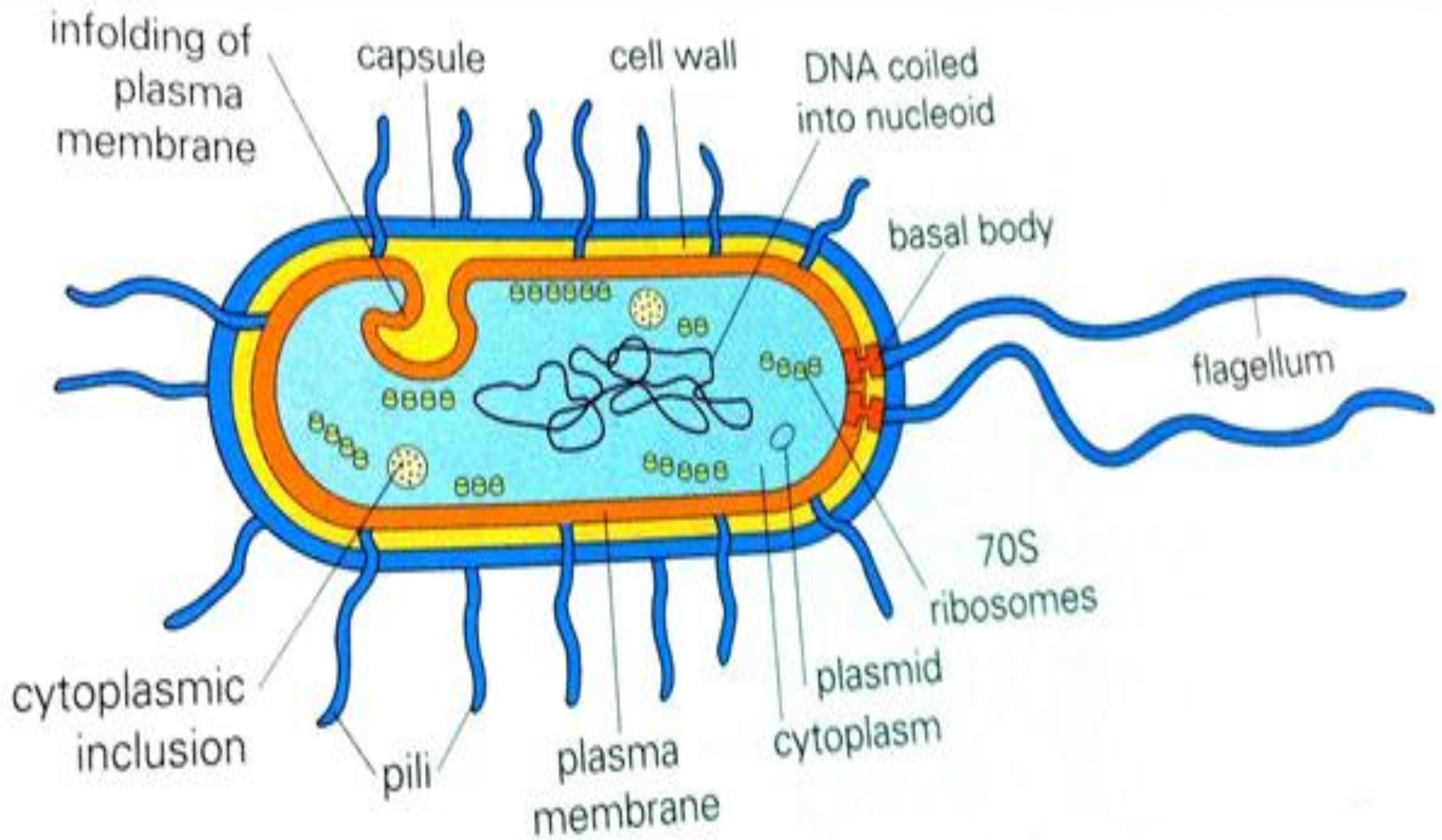
Structures of bacterial cell

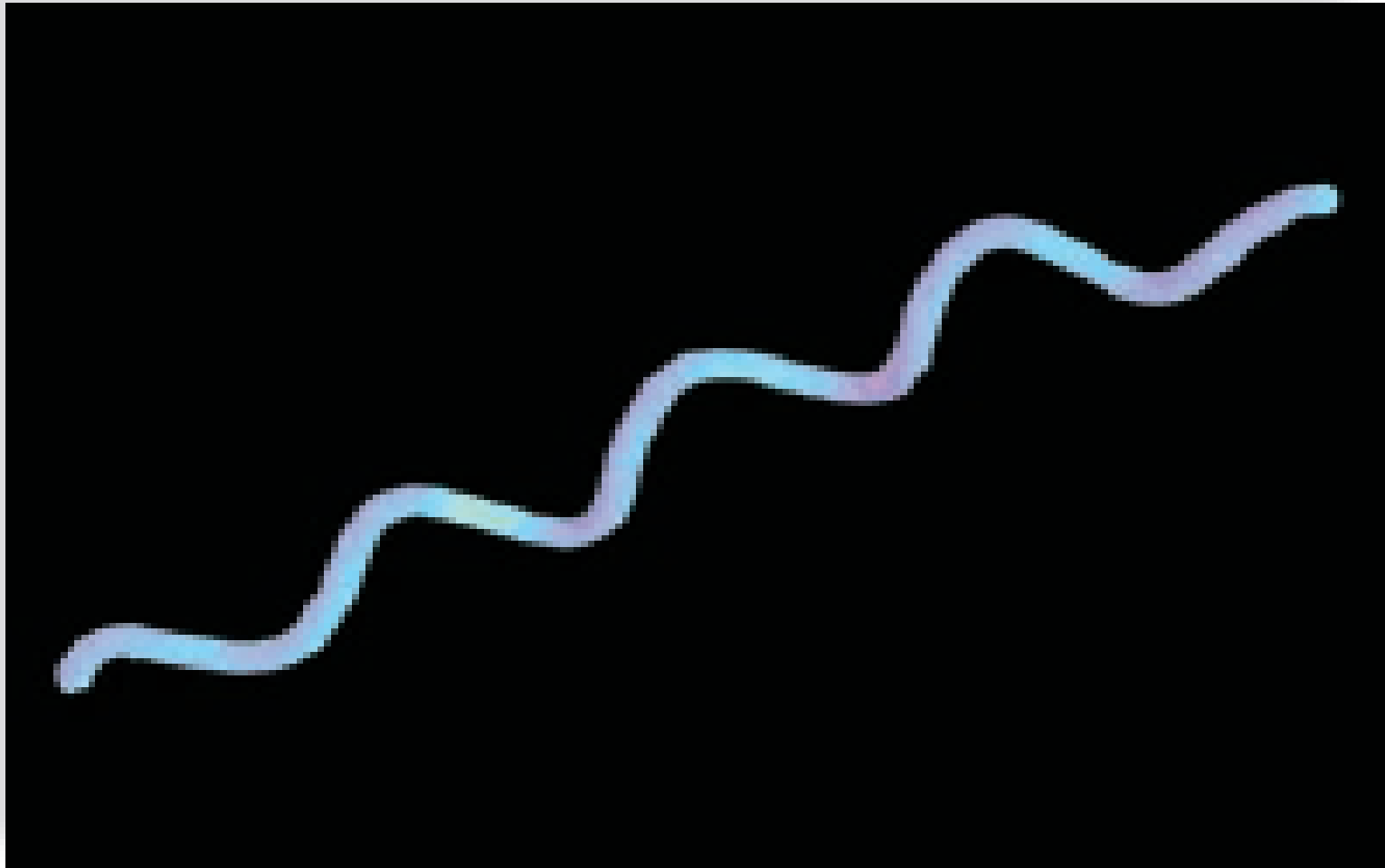
- ▣ Appendages:
- ▣ Cell Envelope
- ▣ Cell wall

Construction of the walls of Gram-positive and Gram-negative bacteria



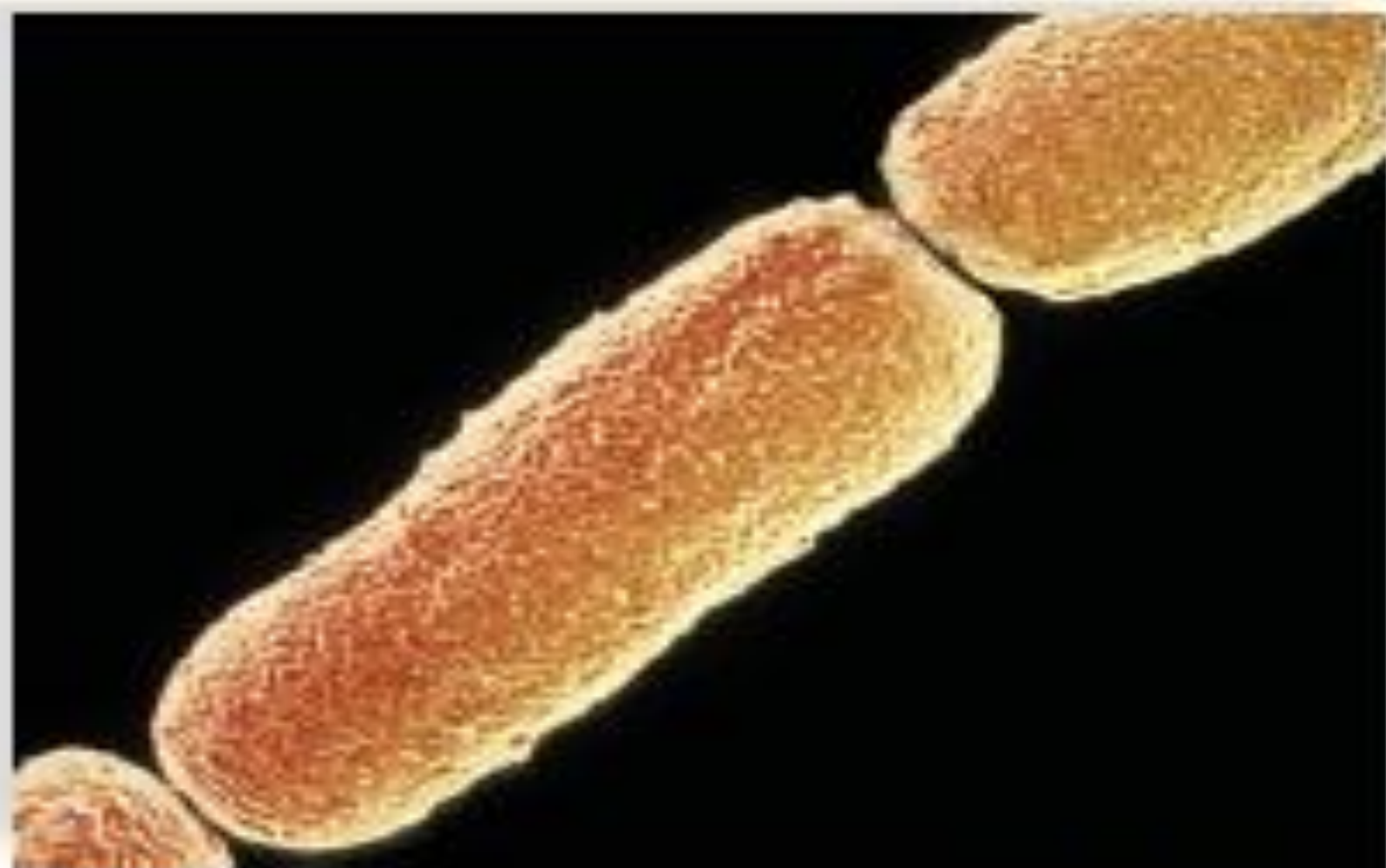
Diagrammatic structure of a generalized bacterium





a. Spirillum:
Spirillum volutans

SEM 3,520x



b. Bacilli:
Bacillus anthracis

SEM 35,000 \times



c. Cocci:
Streptococcus thermophilus

SEM 6,250 \times

Domain Archaea (Archaeobacteria)

Many Archaeobacteria are adapted to extreme environments:

Methanogens

Halophiles

Thermophiles